

REMARKS

Applicants respectfully requests entry of the amendments and remarks submitted herein. The specification has been amended to correct the federal funding information. Claims 1, 2, and 12-19 have been canceled without prejudice to continued prosecution, and new claims 20-40 have been added. Support for new claims 20-40 can be found, for example, on page 5, lines 23-28, page 7, lines 2-4, page 9, lines 5-7, page 11, lines 14-18, and in Example 1 (page 15) and Example 5 (pages 16-17). Support for the amendments to claim 10 reciting "or at risk of developing BPH" can be found, for example, on page 2, lines 9 and 24-26; page 5, line 16; page 8, line 28; and claims 3 and 7 with respect to prostate cancer.

Claims 3-11 and 20-40 are currently pending. Reconsideration of the pending application is respectfully requested.

Change in Inventorship Under 37 CFR §1.48(b)

Applicants respectfully request that Nianzeng Xing be removed as an inventor under 37 CFR §1.48(b) on the above-indicated patent application. The claims for which Dr. Xing is an inventor have been canceled herein. Therefore, Dr. Xing's invention is no longer being claimed in the instant application. A fee of \$130 is included herewith as required under 37 CFR §1.17(i).

The 35 U.S.C. §112 Rejections

Claims 3-11 stand rejected under 35 U.S.C. §112, second paragraph, as the Examiner asserted that those claims are indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicant respectfully traverses this rejection.

The Examiner indicated that claims 3, 7, and 10 are rejected for reciting "derivative thereof." The Examiner asserted that the specification contains no definition of "derivative thereof." Applicant respectfully directs the Examiner to page 7, lines 14-28 of the specification, which describes POH, including derivatives and metabolites. See, for example, page 7, lines 27-28. In view of the specification, Applicant submits that the use of "POH or a derivative thereof" in the claims is not vague and indefinite.

The Examiner also indicated that claim 9 is vague because of the use of "prostectomy." Claim 9 has been amended to correct the spelling error.

In view of the amendments and remarks herein, Applicant respectfully requests that the rejection of claims 3-11 under 35 U.S.C. §112, second paragraph, be withdrawn.

The 35 U.S.C. §103 Rejections

Claims 7 and 10 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the Imagawa et al. reference (U.S. Patent No. 6,133,324). This rejection is respectfully traversed.

The Examiner asserted that the Imagawa et al. reference teaches that perillyl alcohol and derivatives thereof have been demonstrated to provide beneficial anti-cancer effects when administered to a patient. The Examiner concluded that it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to treat prostate cancer and/or BPH by administering a result-effective amount of perillyl alcohol to a patient based on the teachings in the Imagawa et al. reference. The Examiner also noted that the claimed functional effects would be intrinsic upon administration of an anti-cancer effective amount of perillyl alcohol to such a patient.

Applicant's independent claims 7 and 10 recite "administering a dose of perillyl alcohol (POH) or a derivative thereof to said individual effective to inhibit the transactivating ability of an androgen receptor...." The cited reference does not teach or suggest that POH or a derivative thereof can act to inhibit the transactivating ability of the androgen receptor. Therefore, and contrary to the Examiner's statement, one of ordinary skill in the art would not have known what a "result-effective" amount was without knowing the mode of action of POH or a derivative thereof. Accordingly, Applicant's claims are not obvious over the Imagawa et al. reference, and Applicant respectfully requests that the rejection of claims 7 and 10 under 35 U.S.C. §103(a) be withdrawn.

Claims 3-11 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the Imagawa et al. reference in view of the Shyjan et al. reference (U.S. Patent No. 6,355,430). Applicant respectfully traverses this rejection.

The Examiner asserted that the Imagawa et al. reference teaches that administering perillyl alcohol and derivatives thereof has been demonstrated to provide beneficial anti-cancer effects in a patient. The Examiner further asserted that the Shyhan et al. reference teaches “administering an anti-androgen agent to cultured prostate cancer cells to serve as a marker for monitoring the transactivating ability of an androgen receptor for treatment of prostate cancer...”

The Examiner concludes that it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to modify the teachings taught by the Imagawa et al. reference with respect to the anti-cancer activity provided by perillyl alcohol to include the teachings taught by the Shyhan et al. reference of administering an anti-androgen agent to cultured prostate cells to serve as a marker for monitoring the transactivating ability of an androgen receptor. The Examiner goes on to state that one of ordinary skill in the art would have been motivated to include the adjustment of other conventional working conditions such as, for example, the effective dose of perillyl alcohol because such conventional working conditions are deemed merely a matter of judicious selection and routine optimization is well within the purview of the skilled artisan.

The Imagawa et al. reference does not disclose that the anti-cancer activity of POH is due to inhibiting the transactivating ability of the androgen receptor. The Shyhan et al. reference does not teach that POH or a derivative thereof is an anti-androgen agent. The Examiner has used improper hindsight by combining a reference that discloses the anti-cancer activity of POH (Imagawa et al.) with a reference that examines the transactivating ability of the androgen receptor (Shyhan et al.). “Defining the problem in terms of its solution reveals improper hindsight in the selection of the prior art relevant to obviousness” (see *Monarch Knitting Machinery Corp. v. Fukuhara Industrial & Trading Co., Ltd.*, 139 F.3d 977, 45 USPQ2d 1977 (Fed. Cir. 1998)). Inhibiting the transactivating ability of the androgen receptor had not been associated with POH or a derivative thereof prior to the instant invention and none of the references cited by the Examiner suggest such a combination.

In addition, according to *Interconnect Planning Corp. v. Feil* (744 F.2d 1132, 227 USPQ 543 (Fed. Cir. 1985)), “[i]t is [an] error to reconstruct the patentee’s claimed invention from the prior art by using the patentee’s claim as a ‘blueprint.’ When prior art references require selective combination to render obvious a subsequent invention, there must be some reason for

Applicant : Charles Young et al.
Serial No. : 09/957,006
Filed : September 20, 2001
Page : 11 of 11

Attorney's Docket No.: 16235-002001

the combination other than the hindsight obtained from the invention itself." The cited references provide no intrinsic motivation to combine their teachings to result in the claimed methods.

New claims 20-40 recite monitoring steps in which a dose-dependent reduction in PSA levels or a reduction in hK2 levels is monitored. Such reductions correlate with an inhibition of the transactivating ability of the androgen receptor. Monitoring for a reduction in hK2 levels or for a dose-dependent reduction in PSA levels is not obvious over the cited art because without knowledge that POH or a derivative thereof affects the transactivating ability of the androgen receptor, one would not have been motivated to monitor the level of proteins whose expression is regulated by the androgen receptor.

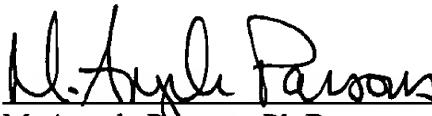
In view of the remarks herein, Applicant respectfully requests that the rejection of claims 3-11 under 35 U.S.C. §103(a) be withdrawn. In addition, Applicant respectfully submits that a rejection under 35 U.S.C. §103 should not be applied to new claims 20-40.

CONCLUSION

Applicant asks that claims 3-11 and 20-40 be allowed. Enclosed is a \$559 check (\$219 for additional claim fees, \$130 for the petition fee, and \$210 for the Petition for Two-Month Extension of Time). Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: February 9, 2004



M. Angela Parsons, Ph.D.
Reg. No. 44,282

Fish & Richardson P.C., P.A.
60 South Sixth Street, Suite 3300
Minneapolis, MN 55402
Telephone: (612) 335-5070
Facsimile: (612) 288-9696
60166800.doc